Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of:	)	
	)	
Public Safety and Homeland Security	)	DA-1556
Bureau Seeks Comment on Increasing	)	PS Docket 10-168
Public Safety Interoperability	)	
by promoting Competition for	)	
Public Safety Communications	)	
Technologies	)	

COMMENTS OF IPWIRELESS, INC.

IPWireless, Inc. ("IPWireless") hereby submits comments in response to the above referenced Public Notice. In these comments, the questions posed by the Commission are shown in italics, and IPWireless' responses in plain text.

IPWireless is a supplier of 3GPP standards based mobile broadband products to the Public Safety market, including Release 8 LTE User Equipment for customer trials in Band 14, 3GPP Release 7 evolving to Release 8 Radio Access Network (RAN) equipment, Evolved Packet Core network (EPC) and Public Safety End User Equipment (UE). The company was the first to have 3GPP products (Release 7) with FCC equipment authorization for the Public Safety Broadband spectrum (3GPP Band 14).

What are the factors that affect the current state of competition in the provision of public safety communications equipment? Are there any additional barriers to additional manufacturers supplying network equipment to the public safety community for narrowband communications? For broadband communications?

Broadband communications using the using the 3GPP[1] LTE[2] standard should be able to stimulate a paradigm shift in public safety communications, using data applications to change operational methods and increase service delivery quality and efficiency. Public Safety is urged to focus on the opportunities presented by mobile broadband data capabilities, and not just on future voice capabilities of LTE using VOIP and interoperability with P25. In terms of competition in the user device market, too much focus on voice and P25 interoperability could restrict the ecosystem, contrary to the Commission's intent.

For broadband communications, using LTE, the competition on supply side of the market is very dependent on the vendor community in the commercial mobile operator market using the LTE standard. This is due to large research and development investment required for such an advance and complex technology, which can deter new players, particularly on the infrastructure side, and is therefore a barrier to entry. A further manifestation of this is the consolidation of the LTE infrastructure suppliers, for example the sale of Nortel assets to Ericsson, the merger of Alcatel and Lucent, the merger of Nokia Networks and Siemens, and the sale of Motorola's wireless infrastructure business to Nokia Siemens. Due to this barrier to entry on the infrastructure side, traditional suppliers of public safety equipment are entering into resale agreements with LTE suppliers, for example Motorola with Ericsson, Harris with Nokia Siemens and EADS with Alcatel Lucent. IPWireless is therefore somewhat unique in being the only existing infrastructure supplier to public safety with its own LTE infrastructure technology.

[1] 3rd Generation Partnership Project
[2] 3GPP Long Term Evolution

There are lower barriers to entry in the LTE User Equipment (UE) market, as LTE chipsets are becoming available. New suppliers can therefore enter the public safety broadband device market, but are still at a disadvantage against UE vendors who also supply the commercial market where volumes are in the tens of millions. Commercial LTE handset / smartphone suppliers are unlikely to enter the public safety market if requirements (such as P25 interoperability) differ from normal commercial market requirements, other than in device software, as the public safety market with a potential of about 1 million users is too small in relative terms.

A further potential deterrent to new entrants to the public safety LTE UE market is the intellectual property (IPR) royalties that must be paid to the holders of 3GPP IPR if the new entrant does not hold substantial IPR.

Could open standards for public safety equipment increase competition? What actions could the Commission take to facilitate openness?

In general, open and widely adopted standards promote maximum competition in telecommunications markets. The 3GPP standards family, of which LTE is part of the latest release for mobile broadband communications, is designed among other things to provide interoperability and roaming for commercial mobile operators, and through open interfaces and standards to create a large and competitive ecosystem of interoperable network infrastructure and user devices.

The choice of LTE by the public safety community maximizes the opportunity for competition in this market, due to the open standard and the ecosystem that is developing around this standard. This potential competition is however dependent on upon the industry being prepared to produce product for Band Class 14[3], which in turn is dependent on several factors:

[3] 3GPP Band Class 14 encompassing the public safety broadband allocation and the D block

- Removal of uncertainty on the future of the 700 MHz D block, and the resultant extent of commercial user device demand, which public safety will be able to take advantage of, whichever way the D block goes.
- Adoption by the Commission of common technical rules applying to Band Class 14 and the commercial 700 MHz allocations (Band classes 12/17 and 13). Note that the current technical rules applying to the public safety broadband spectrum is not an impediment to IPWireless producing user devices for this band, but we are aware that it may be deterring the larger volume suppliers of UE to the commercial market.

The opportunity for maximum competition and wide interoperability in public safety broadband is fragile: in IPWireless's view, the greatest risk to these goals is deviation from the 3GPP standards. It is true that public safety has some unique requirements, which can lead to a view that it requires unique standards. However, 3GPP LTE is a very powerful and flexible standard, and from our analysis and our experience in public safety broadband networks, there are few requirements if any that could require additions or revisions to the 3GPP standards. Public safety should be encouraged to begin deployments with fully standardized 3GPP releases, adding specific requirements only after a thorough review of provision and features in the standards.

Interoperability by definition requires processes to ensure that equipment from different vendors can work together on the same network, and roam between public safety network using disparate vendors equipment. As pointed out by IPWireless in an Exparte in April of this year[4] , the interoperability and device certification processes in LTE are in their early stages. While there may be a temptation to create

[4] 06-229,. IPWireless Ex-parte 04-26-2010 "3GPP LTE Interoperability"

public safety specific processes to speed this up, we caution against this in the interests of benefitting from the overall LTE ecosystem, except for trial equipment.

As the Commission considers requirements for the 700 MHz broadband public safety network, are there any requirements on public safety equipment or network operators that would increase competition in the provision of public safety equipment?

As noted in the preceding comments, the primary requirement should be for strict adherence to 3GPP LTE standards, to allow the competitive market in LTE to spill over into public safety broadband.

As a smaller but innovative company, IPWireless welcomes the opportunity to participate in the public safety broadband market, and our track record shows that we are willing and able to produce equipment tailored to meet public safety and government requirements, while maintaining 3GPP standards compliance. An impediment that we see to smaller companies like ourselves increasing competition in this market is the traditional and sometimes closed procurement practices that favor the traditional supplier. We would welcome any actions by the Commission that encourages fair and open procurement of mobile broadband network and user equipment.

How can the Commission's work on requirements for the 700 MHz broadband public safety network be leveraged to promote interoperability between narrowband and broadband networks?

Interoperability between narrowband (such as P25) and broadband public safety networks is expected to be primarily in the voice domain. Voice sessions between these networks can be bridged using gateways available from multiple vendors, with the support of voice on LTE using Voice over IP (VOIP) facilitating this interconnection. It is recognized that the 3GPP standards framework for voice on LTE

networks is not fully in place, and we advocate that that ERIC and PSCR address this within the 3GPP standards process rather than independently. As noted earlier, excessive focus on the equivalent of narrowband voice on LTE and on P25 interoperability could restrict competition in user devices.

Conclusion

The selection of 3GPP LTE as the standard for public safety broadband provides a unique opportunity to increase competition in the public safety communications equipment markets. Mobile broadband using LTE provides the opportunity for a paradigm shift in public safety communications, which could be lost if there is undue focus on making LTE emulate traditional narrowband networks.

The degree of alignment between the public safety and commercial LTE is very important to maximizing competition in this market. The Commission, ERIC and public safety community should endeavor to adhere to the 3GPP standards to the greatest extent possible.

Respectfully submitted,

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